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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,521	07/10/2003	Kristian Blidegn	14069-004001 / Beat Frequ	1201
26211	7590	01/10/2006	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			STOCK JR, GORDON J	
			ART UNIT	PAPER NUMBER
			2877	
DATE MAILED: 01/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/616,521	Applicant(s) BLIDEGN, KRISTIAN	
	Examiner Gordon J. Stock	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 14-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-13 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040209;20030710</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of **claims 1-13** in the reply filed on October 31, 2005 is acknowledged.
2. **Claims 14-25** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 31, 2005.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on February 9, 2004 and July 10, 2003 have been considered by the examiner.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 116 of Fig. 8 and 126 of Fig. 6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-7** are rejected under 35 U.S.C. 102(b) as being anticipated by **Bartelt et al.** (4,728,193).

As for **claim 1**, Bartelt discloses in a precision automatic mask-wafer alignment system the following: directing light onto components of an optical assembly in which a first component, a mask, includes a first pattern of marks with a first frequency and a second component, a wafer, includes a second pattern of marks with a second different frequency (Fig. 3: 32, 12, 10; col. 6, lines 20-45); detecting an optical signal corresponding to a superposition of the first and second patterns (col. 6, lines 34-38); determining whether the first and second components are properly positioned with respect to one another based on the detected optical signal (col. 6, line 59-67; col. 7, lines 1-5).

As for **claim 2**, Bartelt discloses everything as above (see **claim 1**). In addition, he discloses a beat frequency based on the first and second frequencies (col. 3, lines 1-2; col. 4, lines 15-20).

As for **claim 3**, Bartelt discloses everything as above (see **claim 1**). In addition, he discloses comparing a pattern corresponding to the detected optical signal to a reference pattern of marks (Fig. 7: 52); determining whether the first and second components are properly

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positioned with respect to another based on the comparison (Fig. 7: 50, 52, 54, 56-62; col. 11, lines 50-67; col. 12, lines 1-5).

As for **claim 4**, Bartelt discloses everything as above (see **claim 1**). In addition, he discloses directing light onto a reference pattern of marks in one of the components, the reference pattern of marks corresponding to a superposition of the first and second patterns; detecting a second optical signal based on the reference pattern of marks in the component; and determining whether the first and second components are properly positioned with respect to one another based on the detected optical signals (Fig. 7: 50, 52, 54, 56-62; col. 11, lines 50-67; col. 12, lines 1-5).

As for **claims 5-7**, Bartelt discloses everything as above (see claim 1). In addition, he discloses determining an amount of misalignment between the first and second components (Fig. 7: 50-58); adjusting a relative position of the first and second components thereby fixing the position for exposure to correct for misalignment (Fig. 7: 62-64).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bartelt et al. (4,728,193)** in view of **Brueck et al. (5,343,292)**.

As for **claim 10**, Bartelt discloses everything as above (see **claim 1**). He is silent concerning detecting misalignment on the order of less than .5 microns. However, Brueck

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discloses the need to detection of misalignment on the order of less than .5 microns for high yield manufacturing (col. 1, lines 5-20). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to detect misalignment on the order of less than .5 microns in order to provide high yield manufacturing of microelectronic devices with critical dimensions of about .15 microns.

9. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bartelt et al. (4,728,193)**.

As for **claim 11**, Bartelt discloses everything as above (see **claim 1**). Bartelt does not explicitly state that a wavelength that is not absorbed by the first and second components is used, but he does state that an alignment light with a particular wavelength is used (col. 4, lines 35-50). Examiner takes official notice that it is well-known in the art to use an alignment light with a wavelength that is different from an exposure wavelength to align a wafer and mask. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use an alignment light with a wavelength that is not absorbed in order to prevent unnecessary and wrongful exposure to the substrate.

10. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bartelt et al. (4,728,193)** in view of **Lercel (6,610,446)**.

As for **claim 12**, Bartelt discloses everything as above (see **claim 1**). He is silent concerning digital marks. However, Lercel teaches using digital marks for position data (col. 3, lines 60-67; col. 4, lines 1-30). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have alignment marks comprise digitally encoded marks in order to provide positional data for alignment of the mask and wafer.

11. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bartelt et al. (4,728,193)** in view of **Wu (4,578,590)**.

As for **claim 13**, Bartelt discloses everything as above (see **claim 1**). He is silent concerning a fifty percent duty cycle. However, Wu in a continuous alignment target pattern discloses using a fifty percent duty cycle for alignment (Fig. 2). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the alignment patterns have a fifty percent duty cycle in order to align a mask and wafer.

Allowable Subject Matter

12. **Claims 8-9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 8**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method flipping the first component onto the second component, in combination with the rest of the limitations of **claim 8**.

As to **claim 9**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method the first component comprises a laser diode chip and the second component comprises a light guiding circuit, in combination with the rest of the limitations of **claim 9**.

Conclusion

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent

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Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the **next reply** after the Office action in which the well known statement was made.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

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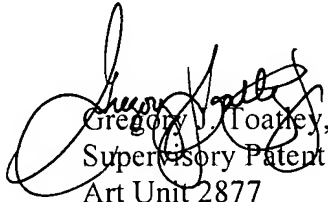
The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DD

gs
January 8, 2006


Gregory J. Toatley, Jr.
Supervisory Patent Examiner
Art Unit 2877
9 Jan 06